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| 09/970,627 | 10/04/2001 | John E. Hudson | 476-2054 | 1390 |

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| EXAMINER |
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FLANAGAN, KRISTA M

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| ART UNIT | PAPER NUMBER |
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2631

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/970,627

Applicant(s)

HUDSON ET AL.

Examiner

Krista M. Flanagan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/04/2001.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because Figure 2, reference characters 12 and 24 are unclear. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Figure 5, missing reference character explanations for 50, 52, 54 and 62. Figure 6, missing reference character explanations for 50, 52, 54 and 601. Figure 7 missing reference character explanations for 700, 701, 702, 703, and 704. Figure 9, missing reference character explanations for 50, 52, and 54. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the

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specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

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4. The abstract of the disclosure is objected to because it contains comparison to prior art.

Correction is required. See MPEP § 608.01(b).

5. The disclosure is objected to because of the following informalities:

a. Throughout the specification, where node B (base station) is referenced, it is suggested it be changed to Node-B as first mentioned on page 4, line 17.

b. Page 19, line 2 recites "The user terminal (2)6 transmits". It is suggested that "(2)" be omitted so that the line recites, "The user terminal 6 transmits".

Appropriate correction is required.

6. Claim 15 is objected to because of the following informalities: Line 2 recites, "of receiving a substantially continuous signals". It is suggested that "a" be omitted from this phrase. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

8. Claims 1-6, 8-13, 15, 16, and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. The term "substantially" in claims 1-6, 8-13, 15, 16, and 20 is a relative term, which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. A

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“substantially continuous signal” is an indefinite phrase and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention without undue experimentation.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kowalewski et al., US Patent Application No. US 2002/0154676 A1.

12. Regarding claim 1, Kowalewski discloses a method of achieving uplink communication from a user terminal to a base station in a wireless communications system said base station supporting a plurality of such user terminals (See page 1, ¶0013); said method comprising the steps of: (i) for each of a plurality of the user terminals supported by the base station transmitting a signal simultaneously from the user terminal to the base station, said signals comprising a repeated spreading code word with a spreading factor and power level arranged (See page 2, ¶0023, lines 1-5) such that the resulting background noise level is prevented from causing significant interference at the base station in use even when user terminals simultaneously transmit signals to the base station (See page 2, ¶0017, lines 4-10 and ¶0023, lines 1-5); and (ii) when a particular user terminal requires to send uplink information to the base station, indicating this to the base station by modulating the signal from that user terminal to the base station (See page 3, ¶0026, lines 7-9 and 20-24). Kowalewski does not expressly disclose more than 250 user terminals. He does disclose the fact that the spreading factor can be more than 256, which would

lead to the capability of handling more than 250 user terminals. It would have been obvious to one of ordinary skill in the art to increase the spreading factor to increase the number of user terminals that can simultaneously transmit.

13. Regarding claim 2, which inherits all of the limitations of claim 1, Kowalewski discloses a method of achieving uplink communication from a user terminal to a base station in a wireless communications system wherein indication, when ready to send uplink information, is made to the base station by applying a cyclic shift to the spreading code word of the signal (See page 3, ¶0026, lines 20-24).

14. Regarding claim 3, which inherits all of the limitations of claim 1, Kowalewski discloses a method of achieving uplink communication from a user terminal to a base station in a wireless communications system wherein in said step (i) of transmitting, a plurality of user terminals transmit the signals (See page 2, ¶0024).

15. Regarding claim 4, which inherits all of the limitations of claim 1, Kowalewski discloses a method of achieving uplink communication from a user terminal to a base station in a wireless communications system wherein said step (ii) further comprises sending uplink information from the particular user terminal to the base station using the signal from that user terminal to the base station and by increasing the information rate of that signal whilst the uplink information is sent (See page 3, ¶0026, lines 20-24).

16. Regarding claim 5, which inherits all of the limitations of claim 4, Kowalewski discloses a method of achieving uplink communication from a user terminal to a base station in a wireless communications system wherein increasing the information rate of the signal during said step (ii)

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is achieved by applying a cyclic shift to the spreading code word (See page 3, ¶0026, lines 20-24).

17. Regarding claim 6, which inherits all of the limitations of claim 1, Kowalewski discloses a method of achieving uplink communication from a user terminal to a base station in a wireless communications system wherein said signal comprises a deterministic, contentionless access channel (See page 2, ¶0022, lines 10-20) wherein an uplink channel is a deterministic and contentionless access channel.

18. Regarding claim 7, which inherits all of the limitations of claim 1, Kowalewski discloses a method of achieving uplink communication from a user terminal to a base station in a wireless communications system wherein said wireless communications system is selected from a mobile, portable, or fixed wireless access system (See page 1, ¶0013).

19. Regarding claim 8, which inherits all the limitations of claim 1, Kowalewski discloses a method of achieving uplink communication from a user terminal to a base station in a wireless communications system wherein during said step (i) of transmitting a signal, the spreading factor is about 4096 or higher (See page 2, ¶0024, lines 5-9).

20. Regarding claim 9, which inherits all of the limitations of claim 1, Kowalewski discloses a method of achieving uplink communication from a user terminal to a base station in a wireless communications system, which further comprises, at the base station, receiving the signals and using them to estimate a channel impulse response for each of the user terminals (See page 2, ¶0018, lines 1-6).

21. Regarding claim 10, which inherits all of the limitations of claim 1, Kowalewski discloses a method of achieving uplink communication from a user terminal to a base station in a

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wireless communications system wherein the signals from each user terminal are arranged to allow the base station to identify each user terminal (See page 3, ¶0026, lines 20-24).

22. Regarding claim 11, which inherits all of the limitations of claim 10, Kowalewski discloses a method as claimed in claim 10 wherein the same spreading code word is repeated in each substantially continuous signal, but with a different cyclic shift being applied to the spreading code word associated with each user terminal (See page 3, ¶0026, lines 20-24).

23. Regarding claim 12, which inherits all of the limitations of claim 10, Kowalewski discloses a method wherein substantially orthogonal spreading code words are used for different user terminals (See page 3, ¶0026, lines 29-36).

24. Regarding claim 13, Kowalewski discloses a method of operating a base station in a wireless communications system, said base station supporting a plurality of user terminals, said method comprising: (i) receiving a signal simultaneously from each of a plurality of the user terminals supported by the base station, said signals comprising a repeated spreading code word with a spreading factor and power level arranged (See page 2, ¶0023, lines 1-5) such that the resulting background noise level is prevented from causing significant interference at the base station in use even when a plurality of user terminals simultaneously transmit signals to the base station (See page 2, ¶0017, lines 4-10 and ¶0023, lines 1-5); and (ii) receiving an indication from one of the user terminals which requires to send uplink information to the base station, said indication being provided by a modulation of the signal from that user terminal to the base station (See page 3, ¶0026, lines 7-9 and 20-24). Kowalewski does not expressly disclose more than 250 user terminals. He does disclose the fact that the spreading factor can be more than 256, which would lead to the capability of handling more than 250 user terminals. It would have

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been obvious to one of ordinary skill in the art to increase the spreading factor to increase the number of user terminals that can simultaneously transmit.

25. Regarding claim 14, which inherits all of the limitations of claim 13, Kowalewski discloses a method which further comprises in said step (ii) of receiving an indication from one of the user terminals, allocating processing resources of the base station to receive and process uplink information from that user terminal (See page 2, ¶0018, lines 9-13).

26. Regarding claim 15, which inherits all of the limitations of claim 13, Kowalewski discloses a method, which further comprises, in said step (i) of receiving signals from each user terminal, using those signals to estimate a channel impulse response for each user terminal (See page 2, ¶0018, lines 1-6).

27. Regarding claim 16, Kowalewski discloses a base station for use in a wireless communications system and arranged to support a plurality of user terminals, said base station comprising (i) an input arranged to receive, at the same time, a signal from each of the a plurality of the user terminals supported by the base station, said signal comprising a repeated spreading code word with a spreading factor and power level arranged (See page 2, ¶0023, lines 1-5) such that the resulting background noise is prevented from causing significant interference at the base station even when a plurality of terminals simultaneously transmit such signals to the base station (See page 2, ¶0017, lines 4-10 and ¶0023, lines 1-5); and (ii) wherein said input is further arranged to receive an indication from one of the user terminals which requires to send uplink information to the base station, said indication being provided by a modulation of the signal from that user terminal to the base station (See page 3, ¶0026, lines 7-9 and 20-24). Kowalewski does not expressly disclose more than 250 user terminals. He does disclose the fact that the spreading

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factor can be more than 256, which would lead to the capability of handling more than 250 user terminals. It would have been obvious to one of ordinary skill in the art to increase the spreading factor to increase the number of user terminals that can simultaneously transmit.

28. Regarding claim 17, which inherits all of the limitations of claim 16, Kowalewski discloses a base station which comprises a processor and an allocator arranged to allocate resources of that processor to receive and process uplink information from a user terminal which has made an indication that it requires to send uplink information (See page 2, ¶0018, lines 9-13).

29. Regarding claim 18, which inherits all of the limitations of claim 17, Kowalewski discloses a wireless communications network comprising a base station (See page 1, ¶0013).

30. Regarding claim 19, which inherits all of the limitations of claim 13, Kowalewski discloses a base station, which carries out the method of claim 13. He does not expressly disclose a computer program stored on a computer readable medium and arranged to control a base station in order to carry out the method but this is inherent. One of ordinary skill in the art would recognize that there must be a program stored on a medium that is arranged to control the base station.

31. Regarding claim 20, Kowalewski discloses a user terminal for use in a wireless communications system, said user terminal being one of a plurality of terminals supported by a base station in the wireless communications network; said user terminal comprising: (i) a transmitter arranged to transmit a signal to the base station said signal comprising a repeated spreading code word with a spreading factor and power level arranged (See page 2, ¶0023, lines 1-5) such that in use the resulting background noise level is prevented from causing significant

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interference at the base station in use even when a plurality of user terminals simultaneously transmitting such signals to the base station (See page 2, ¶0017, lines 4-10 and ¶0023, lines 1-5); and (ii) a processor arranged to modulate the signal in order to indicate to the base station that it is required to send uplink information (See page 3, ¶0026, lines 7-9 and 20-24). Kowalewski does not expressly disclose more than 250 user terminals. He does disclose the fact that the spreading factor can be more than 256, which would lead to the capability of handling more than 250 user terminals. It would have been obvious to one of ordinary skill in the art to increase the spreading factor to increase the number of user terminals that can simultaneously transmit.

Conclusion

32. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krista M. Flanagan whose telephone number is (571) 272-2203. The examiner can normally be reached on Monday - Friday, 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

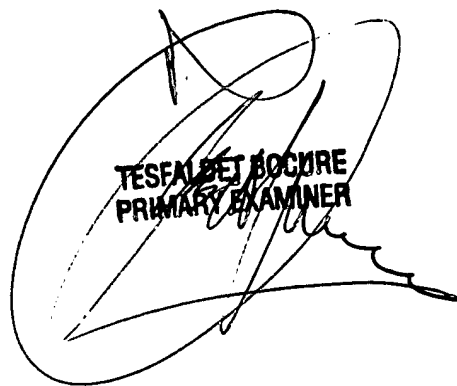
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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TESFALDET BOCHRE
PRIMARY EXAMINER

A large, stylized handwritten signature in black ink, written over the printed name and title. The signature is fluid and cursive, with a large loop at the top and a long, sweeping tail that extends to the right.